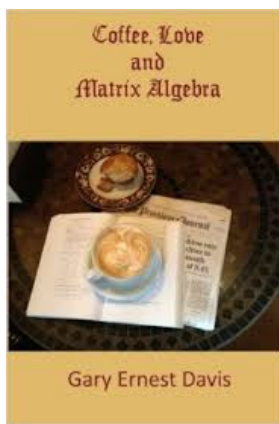


Coffee, Love and Matrix Algebra Gary Ernest Davis Republic of Mathematics, 2014, ISSN 978-0-692262306, 389 pp.

The mission of *The Republic of Mathematics* is to help teachers and students of mathematics. Mathematics should be joyful and should engage people to collaborate. This is a novel that grew out of a daily blog maintained by the author. Gary Davis, professor of mathematics at the University of Massachusetts Dartmouth is involved in an NSF project for stimulating computational mathematics in undergraduate courses in science and engineering.



Gary Ernest Davis

The previous elements are all reflected in the novel. It consists of 77 chapters of about 4-5 pages each. It describes the day-to-day life in a fictional mathematics department. We find all the archetypes of mathematicians taking up a role in the story. And with archetype, I do not mean the typical autistic out-of-this-world strange weirdo that outsiders may have, but the real life mathematicians that any academic mathematician will have known sometime somewhere. Recognizing the idiosyncracies of the characters make you chuckle now and then. But the aftertaste that remains when you finish reading is that Davis is expressing some of his preferences and ideas that are also the ideas of *The Republic of Mathematics*.

The story is about a older professor Jeffrey Albacete whose successful *Matrix Algebra* book, 9th edition is just out. He is used to work on his own and is cocooning in the success of his book, and defending his territory like a watch dog. He is addicted to coffee and muffins. When an open position comes available, he is trying to nominate someone from his domain: Heinrich Zimmer. Almost all the other staff members are in favor of Boa Zhang, a young female who is more computationally oriented. The department chair is not taking the lead. He has taken up this position just to avoid any other duties. In the end both candidates are employed. Albacete, in his beloved coffee shop, learns from a grad student Lisa Da Silva about the possibility of Mathematica to write a book with interactive pieces: the Computational Document Format that makes the mathematics alive 'like in a Harry Potter book'. Lisa, who turns out to be a better coffee aficionado than Jeffrey, is engaged to transform the algebra book into the CFD format. Moreover applications are added by Heinrich and they both become coauthors. These and other changes strike Jeffrey like lightning, but which he starts enjoying after a while.

When the department chair has an accident and is out for several months, a younger staff member becomes the chair, much to the dislikes of inactive older members. Much more is going on, most of all the dynamics of the younger and new staff members initiate many new, more computational and interdisciplinary collaboration, even involving secondary schools and students from engineering.

It is all a bit too optimistic and has the typical American feel of the-sky-is-the-limit and all the puzzle pieces fall too easily into place. When near the end even love and pregnancy is dropped into the story, the topping becomes a bit too sweet to swallow. The first half is fun to read but when Davis starts promoting *The Republic of Mathematics* credo, it becomes somewhat boring.

The characters though are rather convincing and even real existing mathematicians like Gill Strang, Gene Golub and Nick Trefethen appear. Another regrettable feature is that there are several typos, at least more than usual in a novel, and there is an unexplainable blank page 93. There is a lot of modern technology like Mathematica with CDF, MATLAB, Dropbox, etc., but it seems to suggest that these are the only ones, but these are of course not the only ones of their kind. So I expect this to be somewhat restricted to Gary Davis's own experience. A. Bultheel